

Claims:

1. A multiple polymeric additive system comprising:
 - a) a liquid component, and
 - b) a solids component, the solids component comprising polymeric additive particles, the polymeric additive particles comprising:
 - (i) a first population of polymer particles, and
 - (ii) a second population of polymer particles,wherein the compositions of the first and second populations of polymer particles are different, and
- 5 10 15 20 25 wherein the solids component is present in an amount of more than 40 weight percent, said weight percent being based on the total weight of the multiple polymeric additive system.
2. A multiple polymeric additive system as recited in claim 1 wherein the solid component is present in an amount of at least 45 weight percent, said weight percentage being based on the total weight of the multiple polymeric additive system.
3. A multiple polymeric additive system as recited in claim 1 wherein the liquid component comprises at least 5 weight percent water, said weight percentage being based on the total weight of the multiple polymeric additive system's liquid component.
4. A multiple polymeric additive system as recited in claim 1 wherein the liquid component comprises essentially no water.

5. A multiple polymeric additive system as recited in claim 1 wherein the first population of polymeric additive particles has a mean particle diameter in the range of from 10 nm to 50,000 nm.

5 6. A process for making a multiple polymeric additive system, the multiple polymeric additive system comprising a liquid component and a solids component, wherein the solids component comprises polymeric additive particles, said process comprising at least the following steps:

10 (a) providing an aqueous emulsion polymerization reaction mixture comprising a first population of polymer particles and a second population of polymer particles; and

15 (b) polymerizing a first group of one or more ethylenically unsaturated monomers in the aqueous emulsion polymerization reaction mixture, wherein after a portion of the first group of one or more ethylenically unsaturated monomers is polymerized, the chemical compositions of the first and second populations of polymer particles are different, wherein the solids component is present in an amount which is greater than 40 weight percent, wherein the weight percentage is based on the total weight of the multiple polymeric additive system.

20 7. A process for making a multiple polymeric additive system as recited in claim 6, wherein the weight ratio of the first population of polymer particles to the second population of polymer particles are in the range of from 1:99 to 99:1.

25 8. A process for making a multiple polymeric additive system as recited in claim 6, further comprising the step of:

(c) graft-polymerizing a second group of one or more ethylenically unsaturated monomers in the presence of the first and second

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populations of polymer particles to provide a polymer adjacent to the surfaces of the polymer particles of the first and second populations, wherein the second group of one or more ethylenically unsaturated monomers are the same or different as the first group of one or more ethylenically unsaturated monomers of step (b).

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9. A process for making a multiple polymeric additive system as recited in claim 8, wherein the first group of monomers forms a rubbery core polymer and the second group of monomers forms a hard shell polymer.

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10. A process for making a multiple polymeric additive system as recited in claim 9, wherein the rubbery core polymer is present in an amount of from 80 to 99 weight percent, said weight percentage being based on the total weight of the rubbery core and hard shell polymers.

11. A polymeric composition comprising a polymeric component and a polymeric additive component, wherein said polymeric composition is prepared by a process which comprises at least the following steps:

20 (I) forming a blend comprising the polymeric component and at least one multiple polymeric additive system, wherein the multiple polymeric additive system comprises:

25 a) a liquid component, and

b) a solid component, the solid component comprising polymeric additive particles, the polymeric additive particles comprising:

25 (i) a first population of polymer particles, and

25 (ii) a second population of polymer particles,

wherein the compositions of the first and second populations of polymer particles are different, and

wherein the solids component is present in an amount of more than 40 weight percent, said weight percentage being based on the total weight of the multiple polymeric additive system.

5 12. A polymeric composition prepared by the process as recited in claim 11, wherein the solid component is present in an amount of at least 45 weight percent, said weight percentage being based on the total weight of the multiple polymeric additive system.

10 13. A polymeric composition prepared by the process as recited in claim 11, wherein the liquid component comprises at least 5 weight percent water, said weight percentage being based on the total weight of the multiple polymeric additive system's liquid component.

15 14. A polymeric composition as prepared by the process as recited in claim 11, wherein the mean particle diameter of the first population of particles is at least 50% larger than the mean particle diameter of the second population of particles.

20 15. A polymeric composition prepared by the process as recited in claim 11, wherein the liquid component is present in an amount of at most 55 weight percent, said weight percentage being based on the total weight of the multiple polymeric additive system.

25 16. A process for making a polymeric composition comprising a polymeric component and polymeric additive particles, said process comprising at least the following steps:

(I) contacting the polymeric component with a multiple polymeric additive system to form a blend, the multiple polymeric additive system comprising:

a) a liquid component, and
b) a solid component, the solid component comprising polymeric additive particles, the polymeric additive particles comprising:

(i) a first population of polymer particles, and
(ii) a second population of polymer particles,

wherein the compositions of the first and second populations of polymeric additive particles are different, and

wherein the solids component is present in an amount of more than 40 weight percent, said weight percentage being based on the total weight of the multiple polymeric additive system;

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and

(II) removing at least a portion of the liquid component from the blend.

17. A process for making a polymeric composition as recited in claim 16,

wherein step (I) the liquid component is present in an amount of at most 55 weight percent, said weight percentage being based on the total weight of the multiple polymeric additive system.

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18. A process for making a polymeric composition as recited in claim 16

20 wherein, after forming the blend, the blend is formed into an article.

19. A process for making a polymeric composition as recited in claim 16

wherein the polymeric component is in powder form.

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20. A process for making a polymeric composition as recited in claim 16

wherein the polymeric additive particles comprise at least 10 percent by weight of a rubbery core.

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